UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,817	09/19/2001	Gopal N. Iyer	60027.0025US01	1710

EXAMINER	
RAMAKRISHNAIAH, MELUR	

7590   11/03/2005

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ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
		09/955,817	IYER, GOPAL N.
Office Action Summary		Examiner	Art Unit	
		Melur Ramakrishnaiah	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 August 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-12 and 14-16* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-12 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12-2-02/7-2-04</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-7, 11-12, 14-15, 16 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Grenning et al. (US PAT: 5,706,333, hereinafter Grenning) in view of

Moore et al. (US PAT: 4,697,243, hereinafter Moore).

Regarding claim 1, Grenning discloses a computer-implemented method of

troubleshooting a problem associated with a cellular network site, comprising the steps

of: receiving a symptom input describing the symptoms of the problem, determining

whether at least one of plurality of rules is invoked by the symptom input, wherein

plurality of rules comprise a plurality of if-then statements (see table-I), wherein plurality

of if-then statements comprises a plurality if if portions and a plurality of then portions

and if so, then outputting a potential solution to the problem wherein the potential

problem solution is determined by the invoked rule (col. 16, line 23 – col. 17, line 50).

Regarding claim 11, Grenning discloses an expert system for trouble shooting a

problem in a cellular network site, the expert system comprising: a user interface for

transmitting and receiving data to the expert system (col. 6 lines 55-60), an inference

engine in (126, FIG. 1) connected to the user interface, wherein user inference engine

receives data from the user interface and transmits data to the user interface, a

knowledge database (reads on 132, col. 7 lines 25-34) connected to the inference

engine, wherein the knowledge database comprises a plurality of rules (as shown in

table table-I) used to provide potential solutions to the problem, wherein plurality of rules

comprises a plurality if-ten statements wherein if portio9n corresponds to the problem,

and a domain database (reads on 130, fig. 1), wherein the domain database comprises

plurality of facts regarding the cellular network site (col. 7 lines 35-43, col. 16, line 23 –

col. 17, line 50).

Regarding claim 16, Grenning discloses a computer-readable medium having a

computer-executable instructions which, when executed on a computer, cause the

computer to perform a method for troubleshooting a problem associated with the site,

the method comprising: receiving a symptom input describing the symptoms

determining whether at least one of plurality of rules is invoked by the symptom input,

wherein plurality of rules comprise a plurality of if-then statements, wherein plurality of

if-then statements comprises a plurality if portions and a plurality of then portions, if so,

then outputting a potential solution to the problem wherein potential solution is

determined by the invoked rule (col. 7 lines 35-43, col. 16, line 23 – col. 17, line 50).

Grenning differs from claims 1, 11 and 16 in that he does not explicitly teach the

following: then portions corresponding to potential solutions to the problem.

However, Moore teaches the following: the expert system that will display

possible cause, the confidence factor in the belief that this is the cause, as well as

suggestive corrective action on the basis of evidence-hypothesis (hypothesis implies if-

then statement format) format (col. 6 lines 55-66) which implies the following: then portions corresponding to potential solutions to the problem.

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Grenning's system to provide for the following: then portions corresponding to potential solutions to the problem as this arrangement would facilitate the user to obtain solution to the problem using expert system, thus providing possible solution to the problem by using evidence-hypothesis principle as taught by Moore.

Regarding claims 2-3, 5, Grenning further teaches the following: wherein determining whether at least one of plurality of rules is invoked by the symptom input comprises whether the symptom input matches one of the plurality of if portions, and if so, then determining that the rule associated with the matched if portion is invoked, where in the step of outputting a potential solution to the problem comprises outputting the then portion of the invoked rule step of receiving a facts input describing relevant facts regarding the cellular network and wherein the step of determining whether at least one of plurality of rules is invoked by the symptom input further comprises determining whether at least one of the plurality of rules is invoked by the symptom input and the facts input (col. 16, line 23 – col. 17, line 50).

Regarding claim 14-15, Grenning teaches the following: knowledge database is populated with a plurality of rules using a knowledge acquisition facility (KAF, not shown) wherein (KAF) comprises software application for intereviewing cellular network site engineers, wherein KAF formulates plurality of if-then statements from the

interviews with the cellular network site engineers wherein the plurality of if-then

statements are stored as the plurality of rules in the knowledge database (col. 16, line

23 – col. 17, line 50).

Regarding claim 4, Grenning does not explicitly teach the following: outputting

potential solution to the problem comprises displaying the potential solution in a user

interface of a computing device.

However, Moore discloses methods of servicing an elevator system which

teaches the following: outputting potential solution to the problem comprises displaying

the potential solution in a user interface of a computing device (col. 6 lines 60-62).

Thus, it would have been obvious to one of ordinary skill in the art at the time

invention was made to modify Grenning's system to provide for the following: outputting

potential solution to the problem comprises displaying the potential solution in a user

interface of a computing device as this arrangement would facilitate the user to easily

grasp the solution to the problem which is displayed on a display as shown by Moore.

Grenning differs from claims 6-7, 9-10,12 in that he does not teach the following:

if the rule is not invoked, then adding the symptom input to a provisional rule list,

receiving a potential solution input, and adding the symptoms input and potential

solution input as one of plurality of rules stored in a knowledge database, receiving an

indication input indicating whether the potential solution was successful, if the indication

input indicates that the potential solution was successful, then adding the symptom

input to the provisional list, receiving a potential solution input and potential solution

input as one of plurality of rules stored in a knowledge database, provisional rules list comprising problem rules that have not resulted in any potential solutions.

However, Moore teaches the following: if the rule is not invoked, then adding the symptom input to a provisional rule list, receiving a potential solution input, and adding the symptoms input and potential solution input as one of plurality of rules stored in a knowledge database, receiving an indication input indicating whether the potential solution was successful, if the indication input indicates that the potential solution was successful, then adding the symptom input to the provisional list, receiving a potential solution input and potential solution input as one of plurality of rules stored in a knowledge database, provisional rules list comprising problem rules that have not resulted in any potential solutions (col. 3 lines 11-27).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Grenning's system to provide for the following: the adding the symptom input to a provisional rule list, receiving a potential solution input, and adding the symptoms input and potential solution input as one of plurality of rules stored in a knowledge database, computer executable instructions for performing steps of claim 7, receiving an indication input indicating whether the potential solution was successful, if the indication input indicates that the potential solution was successful, then adding the symptom input to the provisional list, receiving a potential solution input and potential solution input as one of plurality of rules stored in a knowledge database, provisional rules list comprising problem rules that have not resulted in any potential solutions as this arrangement would facilitate to add new rules to the domain dependent

rule base, thus allowing the expert system to be constantly improved and more reliable

as taught by Moore.

Response to Arguments

The combination of Grenning and Moore teaches the limitations of amended

claims 1, 11 and new claim 16 as set forth in the office action above.

Regarding Moore reference, Applicants argues that "Moore however, fails to

teach or discloses, or suggest a plurality of rules comprising a plurality of if-then

statements, wherein the plurality of if-then comprises a plurality of if portions and

plurality of then portions, the then portions corresponding to potential solutions to the

problem". Regarding this, Grenning teaches use of plurality of if-then statements to

diagnose cellular system problems using an expert system based on rules set up by

experts (col. 16, line 33 – col. 17, line 23); but he does not explicitly provide solution to

the problem in a then statement. However, Moore discloses system which provide

solution to the problem based on evidence-hypothesis format which implies if-then

statement format (col. 6 lines 55-66). Therefore, combination of Grenning and Moore

teaches the limitations of amended claims 1, 11 and new claim 16 as set forth in the

office action above.

3.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
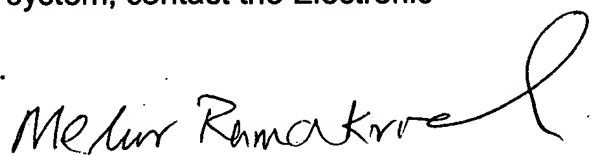
CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Melur Ramakrishnaiah whose telephone number is

(571)272-8098. The examiner can normally be reached on 9 Hr schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Curt Kuntz can be reached on (571) 272-7499. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Melur Ramakrishnaiah
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Art Unit 2643